

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-22 (canceled).

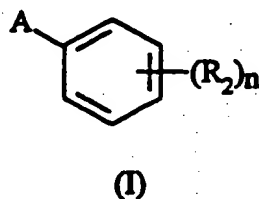
Claim 23 (new): A method for controlling the growth of weeds at a locus in a solid growing medium which comprises treating the locus with an encapsulated composition comprising an isoxazole herbicide to provide progressive or sequential delivery or release of isoxazole herbicide into the surface layer of the medium.

Claim 24 (new): The method of claim 23, wherein said encapsulated composition is a delayed release composition.

Claim 25 (new): The method of claim 23, wherein the encapsulated composition comprises an isoxazole herbicide encapsulated within a solid film, further wherein said solid film comprises an inert material that has no substantial herbicidal activity.

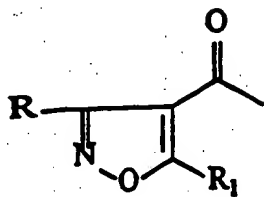
Claim 26 (new): The method according to claim 25, wherein the encapsulated composition is in the form of encapsulated granules and the granules are from 0.1 to 50 μm in size.

Claim 27 (new): The method according to claim 25, wherein the isoxazole herbicide comprises an isoxazole compound of the general formula I

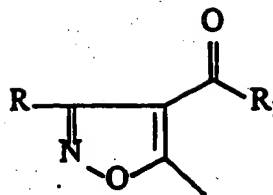


wherein:

A represents a group (A-1) or (A-2):



(A-1)



(A-2)

wherein:

R represents a hydrogen atom or a halogen atom; a straight- or branched-chain alkyl or alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; a cycloalkyl group containing from 3 to 6 carbon atoms optionally substituted by one or more groups R^5 , one or more halogen atoms or a group $-CO_2R^3$; or a group selected from $-CO_2R^3$, $-COR^5$, cyano, nitro, $-CONR^3R^4$ and $-S(O)_kR^{13}$;

R^1 represents a straight- or branched-chain alkyl, alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms, or a cycloalkyl group containing from three to six carbon atoms optionally substituted by one or more groups R^5 or one or more halogen atoms;

R^2 represents a halogen atom; a straight- or branched-chain alkyl, alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; a straight- or branched-chain alkyl group containing up to six carbon atoms which is substituted by one or more groups $-OR^5$; or a group selected from nitro, cyano, $-CO_2R^5$, $-S(O)_pR^6$, $-O(CH_2)_mOR^5$, $-COR^5$, $-NR^{11}R^{12}$, $-N(R^8)SO_2R^7$, $-N(R^8)CO_2R^7$, $-OR^5$, $-OSO_2R^7$, $-SO_2NR^3R^4$, $-CONR^3R^4$, $-CSNR^3R^4$, $-(CR^9R^{10})_l-S(O)_qR^7$ and $-SF_5$; or two groups R^2 , on adjacent carbon atoms of the phenyl ring may, together with the carbon atoms to which they are attached, form a 5 to 7 membered saturated or unsaturated heterocyclic ring containing up to three ring heteroatoms selected from nitrogen, oxygen and sulfur, which ring is optionally substituted by one or more groups selected from halogen, nitro, $-S(O)_pR^{13}$, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} haloalkyl, C_{1-4} haloalkoxy, $=O$ (or a 5- or 6-membered cyclic

acetal thereof), and $=\text{NO}-\text{R}^3$, it being understood that a sulphur atom, where present in the ring, may be in the form of a group $-\text{SO}-$ or $-\text{SO}_2-$;

n represents an integer from one to five; when n is greater than one the groups R^2 may be the same or different;

R^3 and R^4 each independently represent a hydrogen atom, or a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms;

R^5 represents a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; or a straight- or branched-chain alkenyl or alkynyl group containing from two to six carbon atoms which is optionally substituted by one or more halogen atoms;

R^6 and R^7 , which may be the same or different, each represent R^5 or phenyl optionally substituted by from one to five groups which may be the same or different selected from a halogen atom, a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms, nitro, cyano, $-\text{CO}_2\text{R}^5$, $-\text{S}(\text{O})_p\text{R}^{13}$, $-\text{NR}^{11}\text{NR}^{12}$, $-\text{OR}^5$, and $-\text{CONR}^3\text{R}^4$;

R^8 , R^9 and R^{10} each represent a hydrogen atom or R^6 ;

R^{11} and R^{12} each represent hydrogen or R^5 ;

R^{13} represents a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms;

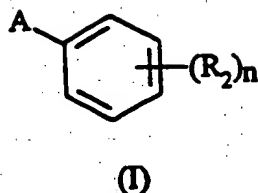
k , p and q independently represent the values zero, one or two;

m represents one, two or three; and

t represents an integer from one to four; when t is greater than one, the groups R^9 and R^{10} may be the same or different;

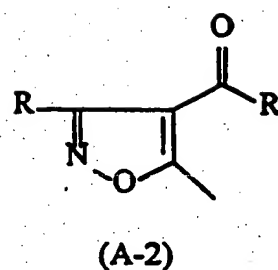
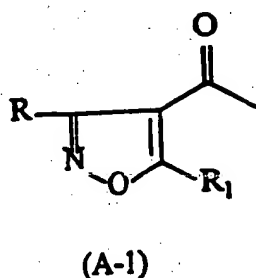
or an agriculturally acceptable salt or metal complex thereof.

Claim 28 (new): A method according to claim 23, wherein the isoxazole herbicide is a compound of general formula I :



wherein:

A represents a group (A-1) or (A-2):



wherein:

R represents a hydrogen atom or a halogen atom; a straight- or branched-chain alkyl or alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; a cycloalkyl group containing from 3 to 6 carbon atoms optionally substituted by one or more groups R^5 , one or more halogen atoms or a group $-CO_2R^3$; or a group selected from $-CO_2R^3$, $-COR^5$, cyano, nitro, $-CONR^3R^4$ and $-S(O)_kR^{13}$;

R^1 represents a straight- or branched-chain alkyl, alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms, or a cycloalkyl group containing from three to six carbon atoms optionally substituted by one or more groups R^5 or one or more halogen atoms;

R^2 represents a halogen atom; a straight- or branched-chain alkyl, alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; a straight- or branched-chain alkyl group containing up to six carbon atoms which is substituted by one or more groups $-OR^5$; or a group selected from nitro, cyano, $-CO_2R^5$, $-S(O)_pR^6$, $-O(CH_2)_mOR^5$, -

COR^5 , $-\text{NR}^{11}\text{R}^{12}$, $-\text{N}(\text{R}^8)\text{SO}_2\text{R}^7$, $-\text{N}(\text{R}^8)\text{CO}_2\text{R}^7$, $-\text{OR}^5$, $-\text{OSO}_2\text{R}^7$, $-\text{SO}_2\text{NR}^3\text{R}^4$, $-\text{CONR}^3\text{R}^4$, $-\text{CSNR}^3\text{R}^4$, $-(\text{CR}^9\text{R}^{10})_i-\text{S}(\text{O})_q\text{R}^7$ and $-\text{SF}_3$; or two groups R^2 , on adjacent carbon atoms of the phenyl ring may, together with the carbon atoms to which they are attached, form a 5 to 7 membered saturated or unsaturated heterocyclic ring containing up to three ring heteroatoms selected from nitrogen, oxygen and sulfur, which ring is optionally substituted by one or more groups selected from halogen, nitro, $-\text{S}(\text{O})_p\text{R}^{13}$, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} haloalkyl, C_{1-4} haloalkoxy, $=\text{O}$ (or a 5- or 6-membered cyclic acetal thereof), and $=\text{NO}-\text{R}^3$, it being understood that a sulphur atom, where present in the ring, may be in the form of a group $-\text{SO}-$ or $-\text{SO}_2-$;

n represents an integer from one to five; when n is greater than one the groups R^2 may be the same or different;

R^3 and R^4 each independently represent a hydrogen atom, or a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms;

R^5 represents a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; or a straight- or branched-chain alkenyl or alkynyl group containing from two to six carbon atoms which is optionally substituted by one or more halogen atoms;

R^6 and R^7 , which may be the same or different, each represent R^5 or phenyl optionally substituted by from one to five groups which may be the same or different selected from a halogen atom, a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms, nitro, cyano, $-\text{CO}_2\text{R}^5$, $-\text{S}(\text{O})_p\text{R}^{13}$, $-\text{NR}^{11}\text{NR}^{12}$, $-\text{OR}^5$, and $-\text{CONR}^3\text{R}^4$;

R^8 , R^9 and R^{10} each represent a hydrogen atom or R^6 ;

R^{11} and R^{12} each represent hydrogen or R^5 ;

R^{13} represents a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms;

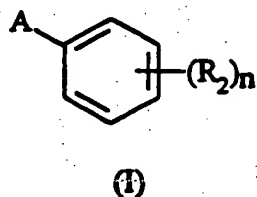
k , p and q independently represent the values zero, one or two;

m represents one, two or three; and

t represents an integer from one to four; when t is greater than one, the groups R^9 and R^{10} may be the same or different;

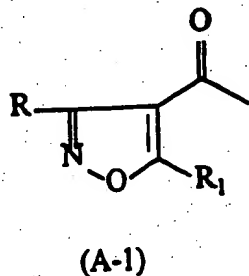
or an agriculturally acceptable salt or metal complex thereof.

Claim 29 (new): A method according to claim 23, wherein the isoxazole herbicide is a compound of the general formula (I)



wherein:

A represents a group (A-1):



wherein:

R represents a hydrogen atom or a halogen atom; a straight- or branched-chain alkyl or alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; a cycloalkyl group containing from 3 to 6 carbon atoms optionally substituted

by one or more groups R^5 , one or more halogen atoms or a group $-CO_2R^3$; or a group selected from $-CO_2R^3$, $-COR^5$, cyano, nitro, $-CONR^3R^4$ and $-S(O)_kR^{13}$;

R^1 represents a straight- or branched-chain alkyl, alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms, or a cycloalkyl group containing from three to six carbon atoms optionally substituted by one or more groups R^5 or one or more halogen atoms;

R^2 represents a halogen atom; a straight- or branched-chain alkyl, alkenyl or alkynyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; a straight- or branched-chain alkyl group containing up to six carbon atoms which is substituted by one or more groups $-OR^5$; or a group selected from nitro, cyano, $-CO_2R^5$, $-S(O)_pR^6$, $-O(CH_2)_mOR^5$, $-COR^5$, $-NR^{11}R^{12}$, $-N(R^8)SO_2R^7$, $-N(R^8)CO_2R^7$, $-OR^5$, $-OSO_2R^7$, $-SO_2NR^3R^4$, $-CONR^3R^4$, $-CSNR^3R^4$, $-(CR^9R^{10})_t-S(O)_qR^7$ and $-SF_5$; or two groups R^2 , on adjacent carbon atoms of the phenyl ring may, together with the carbon atoms to which they are attached, form a 5 to 7 membered saturated or unsaturated heterocyclic ring containing up to three ring heteroatoms selected from nitrogen, oxygen and sulfur, which ring is optionally substituted by one or more groups selected from halogen, nitro, $-S(O)_pR^{13}$, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} haloalkyl, C_{1-4} haloalkoxy, $=O$ (or a 5- or 6-membered cyclic acetal thereof), and $=NO-R^3$, it being understood that a sulphur atom, where present in the ring, may be in the form of a group $-SO-$ or $-SO_2-$;

n represents an integer from one to five; when n is greater than one the groups R^2 may be the same or different;

R^3 and R^4 each independently represent a hydrogen atom, or a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms;

R^5 represents a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms; or a straight- or branched-chain alkenyl or alkynyl group containing from two to six carbon atoms which is optionally substituted by one or more halogen atoms;

R^6 and R^7 , which may be the same or different, each represent R^5 or phenyl optionally substituted by from one to five groups which may be the same or different selected from a halogen

atom, a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms, nitro, cyano, $-\text{CO}_2\text{R}^5$, $-\text{S}(\text{O})_p\text{R}^{13}$, $-\text{NR}^{11}\text{NR}^{12}$, $-\text{OR}^5$, and $-\text{CONR}^3\text{R}^4$;

R^8 , R^9 and R^{10} each represent a hydrogen atom or R^6 ;

R^{11} and R^{12} each represent hydrogen or R^5 ;

R^{13} represents a straight- or branched-chain alkyl group containing up to six carbon atoms which is optionally substituted by one or more halogen atoms;

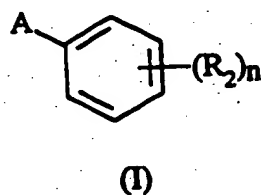
k , p and q independently represent the values zero, one or two;

m represents one, two or three; and

t represents an integer from one to four; when t is greater than one, the groups R^9 and R^{10} may be the same or different;

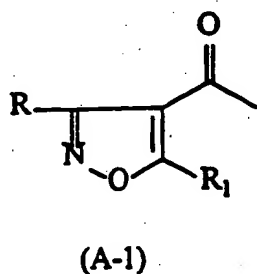
or an agriculturally acceptable salt or metal complex thereof.

Claim 30 (new): A method according to claim 23, wherein the isoxazole herbicide is a compound of the general formula (I)



wherein:

A represents a group (A-1):



wherein:

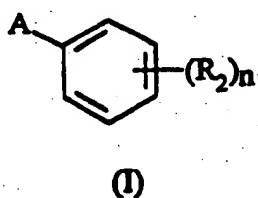
R is hydrogen or $-\text{CO}_2\text{Et}$;

R^1 is cyclopropyl;

n is 3; and

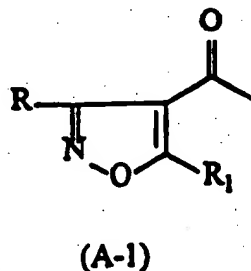
two of the R^2 groups are on adjacent carbon atoms of the phenyl ring and, together with the carbon atoms to which they are attached, combine to form a 5 or 6 membered saturated or unsaturated heterocyclic ring which is fused to the 2,3 or 3,4 positions of the benzoyl ring; wherein the heterocyclic ring contains two hetero atoms selected from sulphur and oxygen which are directly bonded to the 2 and 3, or 3 and 4 positions of the benzoyl ring; and in which the third R^2 group is located at the 4-substituent of the benzoyl ring and is halogen or $\text{S}(\text{O})\text{pMe}$ when the heterocyclic ring is fused to the 2,3 positions of the benzoyl ring, or the third R^2 group is located at the 2-substituent of the benzoyl ring and is methyl, $\text{S}(\text{O})\text{pMe}$ or $-\text{CH}_2\text{S}(\text{O})\text{qMe}$ when the heterocyclic ring is fused to the 3,4 positions of the benzoyl ring; and optionally the heterocyclic ring may be substituted by one or more halogen atoms.

Claim 31 (new): A method according to claim 23, wherein the isoxazole herbicide is a compound of the general formula (I)



wherein:

A represents a group (A-1):



wherein:

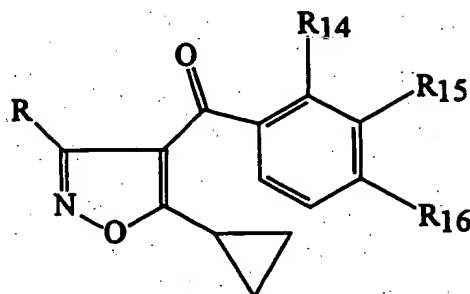
R is hydrogen or -CO₂Et;

R¹ is cyclopropyl;

R² is a halogen atom or a group selected from -CF₃, Me Et, -S(O)pMe, -CH₂S(O)qMe and optionally halogenated methoxy or ethoxy; and

n is two or three.

Claim 32 (new): A method according to claim 23, wherein the isoxazole herbicide is a compound of the formula (Ia)



(Ia)

wherein:

R is hydrogen or -CO₂Et;

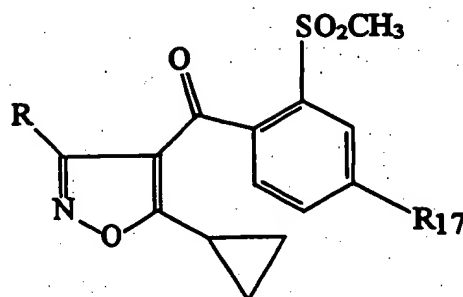
R₁₄ is selected from -S(O)pMe, Me, Et, a chlorine, bromine or fluorine atom, methoxy, ethoxy and -CH₂S(O)qMe;

R₁₅ is selected from a hydrogen atom, a chlorine, bromine or fluorine atom, methoxy, ethoxy and -S(O)pMe; and

R₁₆ is selected from a hydrogen atom, a chlorine, bromine or fluorine atom, methoxy and CF₃;

and wherein at least one of R₁₅ and R₁₆ is other than hydrogen.

Claim 33 (new): A method according to claim 23, wherein the isoxazole herbicide is a compound of the formula (Ib):



(Ib)

wherein:

R₁₇ is chlorine, bromine or trifluoromethyl; and

R is hydrogen or -CO₂Et.

Claim 34 (new): The method of claim 23, wherein the growing medium is soil.

Claim 35 (new): The method of claim 23, wherein the locus is a crop-growing locus.

Claim 36 (new): The method of claim 23, wherein the surface layer of the medium is from the surface to a depth of 10 cm.

Claim 37 (new): A method for controlling the growth of weeds at a locus in a solid growing medium which comprises treating the locus with sequential applications of an encapsulated composition comprising an isoxazole herbicide to provide a sequential delivery or release of isoxazole herbicide into the surface layer of the medium, wherein the amount of isoxazole herbicide in the composition for each of said applications is less than that which would be effective in a single application.

Claim 38 (new): The method of claim 37, wherein said sequential applications consists of two, three, four or five applications, and the amount of isoxazole herbicide in the composition for each of said applications is, respectively, about one-half, one-third, one fourth or one-fifth of the normal effective amount of isoxazole herbicide for a single application.

Claim 39 (new): The method of claim 23, wherein the locus is treated with the encapsulated composition by applying the composition to the locus, further wherein the composition is applied to the locus in association with a carrier.

Claim 40 (new): The method of claim 39, wherein the composition is dispersed in said carrier before the composition is applied to the locus.

Claim 41 (new): The method of claim 26, wherein the locus is treated with the encapsulated composition by applying the composition to the locus, further wherein the composition is applied to the locus in association with a carrier.

Claim 42 (new): The method of claim 41, wherein the composition is dispersed in said carrier before the composition is applied to the locus.